Data Capture Questionnaire

Presentation to
RASC Stratospheric Platform Earth Science Workshop

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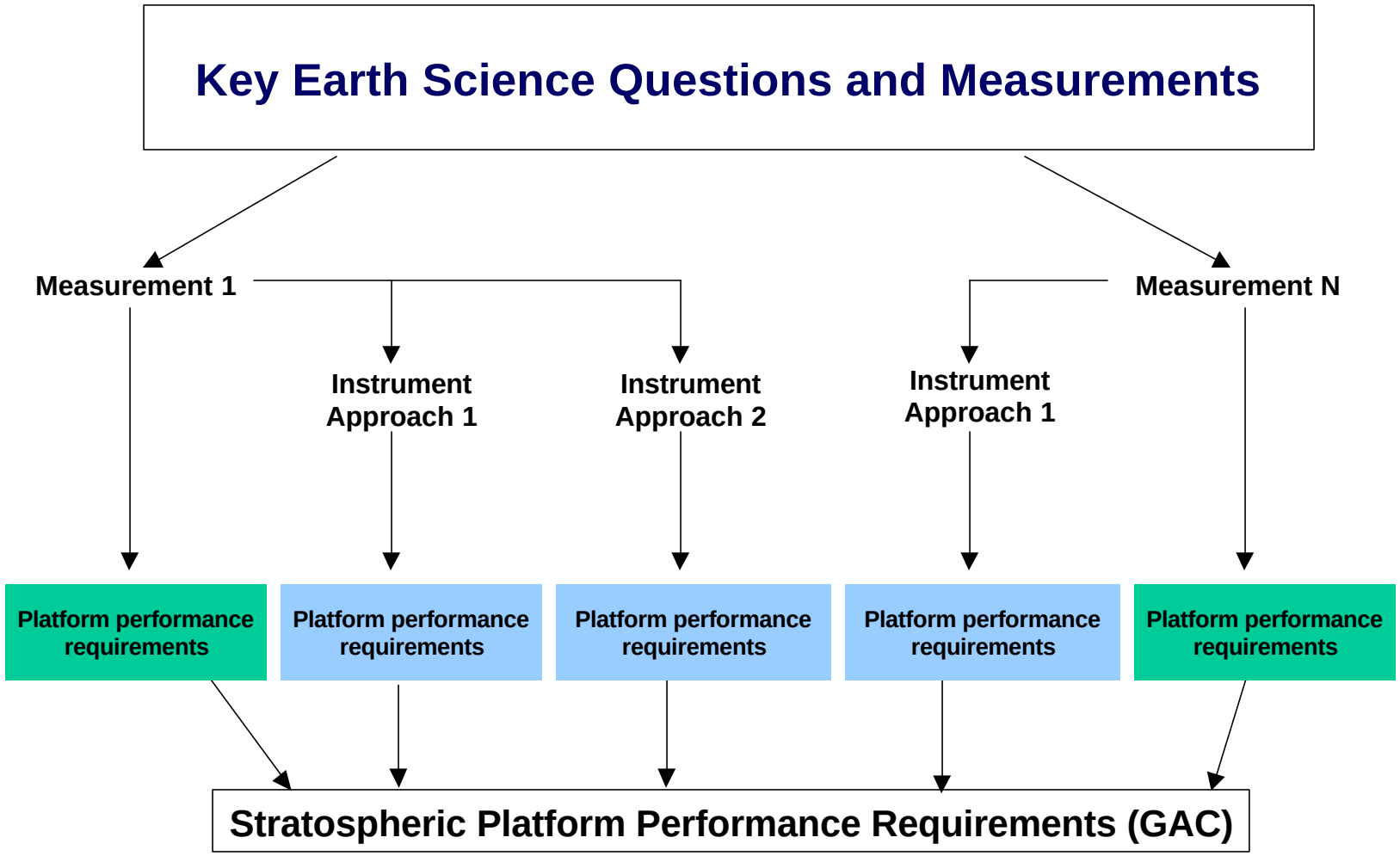
Introduction

- Future technology development needs to be driven by scientific requirements.
- For the rest of the day we will work in groups on science requirements that define desired stratospheric platform performance.
- Questionnaire helps guide your input.

Platform Requirements Flow



Sample Questionnaire, p.1

Group: **Atmospheric Chemistry** Initials_____**AAP**_____

Use the following table to briefly describe the measurements needed to answer key science questions. …

Key Science Questions	**What measurements are needed to answer these questions?**
How is stratospheric ozone changing, as the abundance of ozone-destroying chemicals decreases and new substitutes increases?	**Ozone profiles in tropics from the troposphere up to 35 km**
Other science questions can be listed here	

For each measurement create a Measurement Requirements (green) page.

Sample Questionnaire, p.2

Required Measurement:_____**ozone profiles**_____

Table 1. Platform performance requirements dictated by the Required Measurement:

Spatial characteristics of the measurement:	
Desired horizontal coverage	**Tropics, between 15N and 15 S**
Desired horizontal resolution within the coverage region	**5¡ latitude, 3° longitude**
Desired vertical coverage	**From troposphere to 35 km**
Desired vertical resolution	**100 m**
Spatial accuracy	**1°**

Sample Questionnaire, p.2 (cont.)

Temporal characteristics of the measurement:	
Flight duration	**2 month**
Frequency of observations during the flight	**Every 2 hours day and night**
Simultaneity with other observations	**All platforms make simultaneous observations**
Other:	

For each Required Measurement page create one (or several) Instrument Approach (blue) page(s).

Sample Questionnaire, p.3

Instrument Approach:_____Limb scanning instrument_____

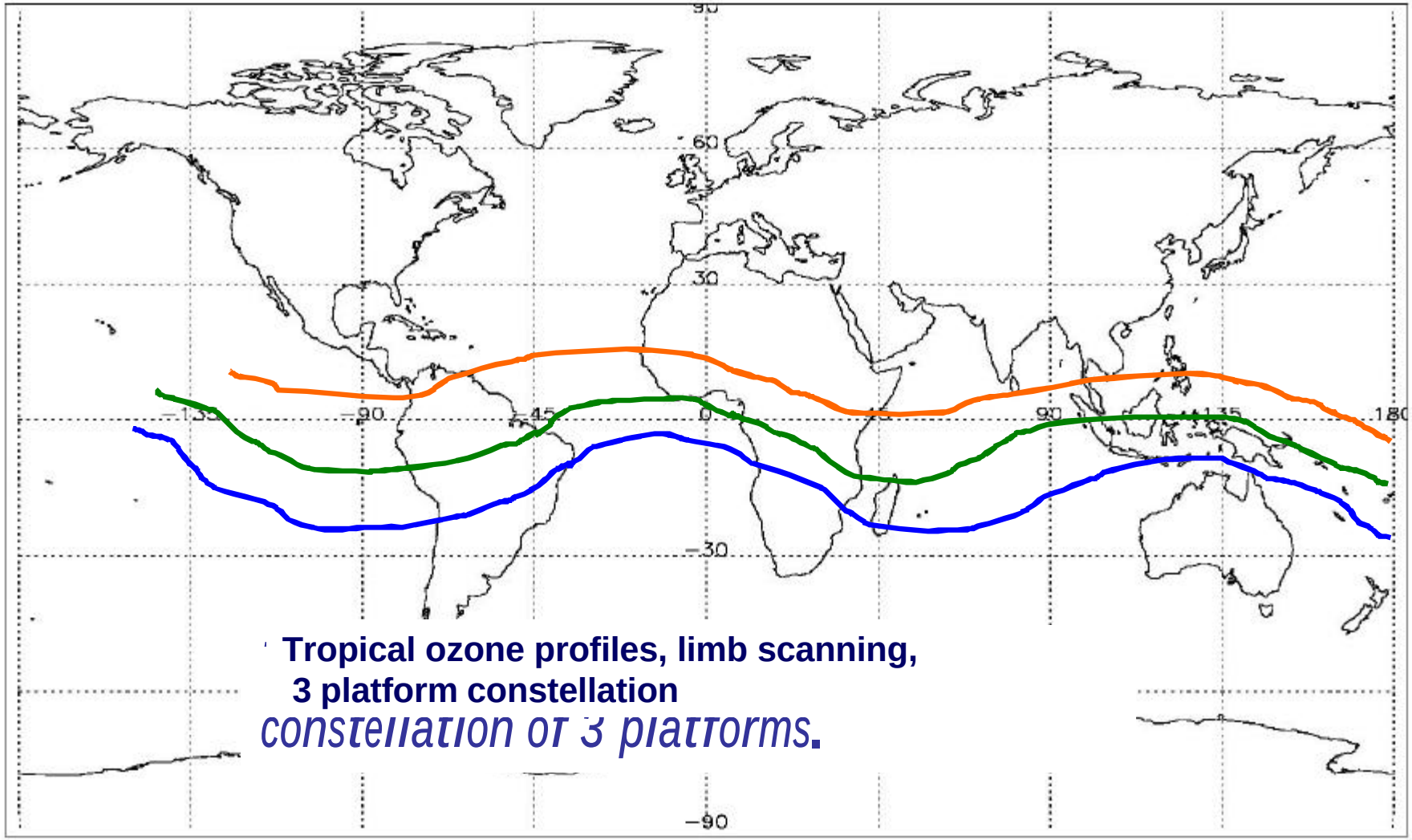
Table 1. Platform performance requirements dictated by the Instrument Approach:(consider both current and future Gnext 30 years Ginstruments):

Safe payload recovery	Crucial (expensive instrument)
Useful science payload mass	At least 200 kg
Power draw (include temporal profile if possible)	100 W continuous
Pointing accuracy, including: Platform attitude control; Platform attitude knowledge.	Attitude knowledge within 1¡ for instrument pointing
Position accuracy, including: Platform position control; Platform position knowledge.	Position knowledge within 1 km

Sample Questionnaire, p.3 (cont.)

Calibration (In flight, via ground truth, pre/post flight)	**In flight, every 10 days**
Data storage and relay	**10 Mbytes/day storage**
Coordination between platforms	**2 platforms make remote measurements of the same atmospheric region**
Other	

Sample Questionnaire, p.4



Tropical ozone profiles, limb scanning, 3 platform constellation

constellation of 3 platforms.

Breakout Groups

Atmospheric Chemistry (130)

William S. Heaps, Chair
William H. Brune
Elliot Weinstock
Randy Kawa
Arlyn Andrews
Alexey Pankine

Geomagnetism (Lobby)

Michael Purucker, Chair
Yury Tsvetkov
Jim Heirtzler
Gunther Kletetschka
Patrick T. Taylor
Dimitar Ouzounov
Jeff Love
Kerry Nock

Earth Radiation Balance (Conference Room)

Zhanqing Li, Chair
Albert Arking, Co-Chair
Wenying Su
Ellsworth G. Dutton
Rachel Pinker
Seiji Kato
Dave Atlas
Jay Herman
Lee Harrison
Thomas Vonder Haar
Matthew Heun

Suggested Plan for Breakout Sessions

- 10:30-11:00 Science questions
- 11:00-12:00 Measurements
- 13:00-14:30 Instrument approaches
- 14:30-15:30 Prepare group report
  - text
  - viewgraphs
  - PowerPoint presentation